



## SEQUENCE LISTING

<110> Kuo, Min-Hao  
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Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
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Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
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Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
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Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Phe Met Ala Arg Thr  
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Lys Gln Thr Ala Arg Lys Ser Thr Gly Gly Lys Ala Pro Arg Lys Gln  
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Lys Lys Pro His Arg Tyr Lys Pro Gly Thr Val Ala Leu Arg Glu Ile  
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Arg Arg Phe Gln Lys Ser Thr Glu Pro Gly Ser Pro Ile Leu Gly Tyr  
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Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
245 250 255

Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
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Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
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Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
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Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
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Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
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Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
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Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
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Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
370 375 380

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
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Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
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Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
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Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
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Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Phe Lys Lys  
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Ile	Pro	Gly	Gly	Gly	Arg	Ile	Phe	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr
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Ala	Gly	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Gly	Ser	Tyr	Pro	Tyr
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Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
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Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
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Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Phe Met Ala Arg Thr  
165 170 175

Lys Gln Thr Ala Arg Lys Ser Thr Gly Gly Lys Ala Pro Arg Lys Gln  
180 185 190

Leu Ala Ser Lys Ala Ala Arg Lys Ser Ala Pro Ser Thr Gly Gly Val  
195 200 205

Lys Lys Pro His Arg Tyr Lys Pro Gly Thr Val Ala Leu Arg Glu Ile  
210 215 220

Arg Arg Phe Gln Lys Ser Thr Glu Pro Gly Ser Pro Ile Leu Gly Tyr  
225 230 235 240

Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
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Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
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Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
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Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
290 295 300

Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
305 310 315 320

Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
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Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
340 345 350

Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
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Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
370 375 380

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
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Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
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Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
420                   425                   430

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
435                   440                   445

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Ala Lys Lys  
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Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
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Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala  
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Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
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Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
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Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
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Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
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Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
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Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
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Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Ser Gly Arg Gly Lys  
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Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Lys Arg His Arg Lys Ile  
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Leu Arg Asp Asn Ile Gln Gly Ile Ser Gly Ser Pro Ile Leu Gly Tyr  
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Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
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Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
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Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
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Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
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Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
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Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
370 375 380

Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
385 390 395 400

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
405 410 415

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Phe Lys Lys  
420 425 430

Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
435 440 445

Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Ser Met Ala  
450 455 460

Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
465 470 475 480

Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr  
485 490 495

Asp Val Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
500 505

<210> 18  
 <211> 509  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 18  
  
 Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
 1 5 10 15  
  
 Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
 20 25 30  
  
 Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
 35 40 45  
  
 Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
 50 55 60  
  
 Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
 65 70 75 80  
  
 Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
 85 90 95  
  
 Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
 100 105 110  
  
 Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
 115 120 125  
  
 Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
 130 135 140 145  
  
 Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
 145 150 155 160  
  
 Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Ser Gly Arg Gly Lys  
 165 170 175  
  
 Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Lys Arg His Arg Lys Ile  
 180 185 190  
  
 Leu Arg Asp Asn Ile Gln Gly Ile Ser Gly Ser Pro Ile Leu Gly Tyr  
 195 200 205

Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
210 215 220 225 230 235 240

Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
225 230 235 240

Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
245 250 255

Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
260 265 270

Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
275 280 285

Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
290 295 300

Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
305 310 315 320

Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
325 330 335

Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
340 345 350

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
355 360 365

Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
370 375 380

Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
385 390 395 400

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
405 410 415

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Ala Lys Lys  
420 425 430

Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
435 440 445

Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Ser Met Ala  
450 455 460

Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
465 470 475 480

Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr  
485 490 495

Asp Val Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
500 505

<210> 19  
<211> 541  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 19

.Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
65 70 75 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Phe Met Ala Arg Thr  
165 170 175

Lys Gln Thr Ala Arg Lys Ser Thr Gly Gly Lys Ala Pro Arg Lys Gln  
180 185 190

Leu Ala Ser Lys Ala Ala Arg Lys Ser Ala Pro Ser Thr Gly Gly Val  
195 200 205

Lys Lys Pro His Arg Tyr Lys Pro Gly Thr Val Ala Leu Arg Glu Ile  
210 215 220

Arg Arg Phe Gln Lys Ser Thr Glu Pro Gly Ser Pro Ile Leu Gly Tyr  
225 230 235 240

Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
245 250 255

Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
260 265 270

Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
275 280 285

Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
290 295 300

Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
305 310 315 320

Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
325 330 335

Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
340 345 350

Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
355 360 365

Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
370 375 380

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
385 390 395 400

Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
405 410 415

Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
420 425 430

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
435 440 445

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Phe Lys Lys  
450 455 460

Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
465 470 475 480

Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala  
485 490 495

Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
500 505 510

Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr  
515 520 525

Asp Val Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
530 535 540

<210> 20  
<211> 541  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 20

Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
65 70 75 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Phe Met Ala Arg Thr  
165 170 175

Lys Gln Thr Ala Arg Lys Ser Thr Gly Gly Lys Ala Pro Arg Lys Gln  
180 185 190

Leu Ala Ser Lys Ala Ala Arg Lys Ser Ala Pro Ser Thr Gly Gly Val  
195 200 205

Lys Lys Pro His Arg Tyr Lys Pro Gly Thr Val Ala Leu Arg Glu Ile  
210 215 220

Arg Arg Phe Gln Lys Ser Thr Glu Pro Gly Ser Pro Ile Leu Gly Tyr  
225 230 235 240

Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
245 250 255

Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
260 265 270

Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
275 280 285

Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
290 295 300

Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
305 310 315 320

Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
325 330 335

Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
340 345 350

Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
355 360 365

Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
370 375 380

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
385 390 395 400

Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
405 410 415

Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
420 425 430

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
435 440 445

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Ala Lys Lys  
450 455 460

Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
465 470 475 480

Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala  
485 490 495

Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
500 505 510

Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr  
515 520 525

Asp Val Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
530 535 540

<210> 21  
<211> 509  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 21

Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
65 70 75 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Ser Gly Arg Gly Lys  
165 170 175

Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Lys Arg His Arg Lys Ile  
180 185 190

Leu Arg Asp Asn Ile Gln Gly Ile Ser Gly Ser Pro Ile Leu Gly Tyr  
195 200 205

Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
210 215 220

Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
225 230 235 240

Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
245 250 255

Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
260 265 270

Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
275 280 285

Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
290 295 300

Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
305 310 315 320

Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
325 330 335

Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
340 345 350

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
355 360 365

Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
370 375 380

Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
385 390 395 400

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
405 410 415

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Phe Lys Lys  
420 425 430

Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
435 440 445

Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Ser Met Ala  
450 455 460

Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
465 470 475 480

Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr  
485 490 495

Asp Val Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
500 505

<210> 22  
<211> 509  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 22

Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
65 70 75 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Leu Thr Thr Met Ser Gly Arg Gly Lys  
165 170 175

Gly Gly Lys Gly Leu Gly Lys Gly Ala Lys Arg His Arg Lys Ile  
180 185 190

Leu Arg Asp Asn Ile Gln Gly Ile Ser Gly Ser Pro Ile Leu Gly Tyr  
195 200 205

Trp Lys Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly  
210 215 220

Arg Gly Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu  
225 230 235 240

Glu Ile Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp  
245 250 255

Lys Glu Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly  
260 265 270

Ser Glu Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe  
275 280 285

Asp Gly Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu  
290 295 300

Asn Glu Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys  
305 310 315 320

Glu Asn Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln  
325 330 335

Leu Pro Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg  
340 345 350

Ser His Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly  
355 360 365

Gly Ile Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val  
370 375 380

Phe Cys Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His  
385 390 395 400

Leu Met Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys  
405 410 415

Tyr Phe Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Ala Lys Lys  
420 425 430

Gln Gly Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly  
435 440 445

Tyr Ile Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Ser Met Ala  
450 455 460

Ile Pro Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr  
465 470 475 480

Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr  
485 490 495

Asp Val Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
500 505

<210> 23  
<211> 475  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 23

Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
65 70 75 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140 145

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Gly Ser Pro Ile Leu Gly Tyr Trp Lys  
165 170 175

Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly Arg Gly  
180 185 190

Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu Glu Ile  
195 200 205

Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp Lys Glu  
210 215 220

Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly Ser Glu  
225 230 235 240

Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe Asp Gly  
245 250 255

Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu Asn Glu  
260 265 270

Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys Glu Asn  
275 280 285

Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln Leu Pro  
290 295 300

Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg Ser His  
305 310 315 320

Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly Gly Ile  
325 330 335

Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val Phe Cys  
340 345 350

Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His Leu Met  
355 360 365

Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys Tyr Phe  
370 375 380

Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly  
385 390 395 400

Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly Tyr Ile  
405 410 415

Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala Ile Pro  
420 425 430

Gly Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly  
435 440 445

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr Asp Val  
450 455 460

Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
465 470 475

<210> 24  
<211> 475  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 24

Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
65 70 75 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Gly Ser Pro Ile Leu Gly Tyr Trp Lys  
165 170 175

Gly Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly Arg Gly  
180 185 190

Asp Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu Glu Ile  
195 200 205

Gln Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp Lys Glu  
210 215 220

Asn Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly Ser Glu  
225 230 235 240

Val Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe Asp Gly  
245 250 255

Val Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu Asn Glu  
260 265 270

Gly Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys Glu Asn  
275 280 285

Met Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln Leu Pro  
290 295 300

Lys Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg Ser His  
305 310 315 320

Leu Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly Gly Ile  
325 330 335

Thr Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val Phe Cys  
340 345 350

Ala Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His Leu Met  
           355                 360                 365  
  
 Asn His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys Tyr Phe  
           370                 375                 380  
  
 Leu Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Ala Lys Lys Gln Gly  
   385                 390                 395                 400  
  
 Phe Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly Tyr Ile  
           405                 410                 415  
  
 Lys Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala Ile Pro  
           420                 425                 430  
  
 Gly Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly  
           435                 440                 445  
  
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr Asp Val  
           450                 455                 460  
  
 Pro Asp Tyr Ala Ala Gln Cys Gly Arg Ser Ser  
           465                 470                 475  
  
 <210> 25  
 <211> 486  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 25  
  
 Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
   1             5                 10                 15  
  
 Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
   20             25                 30  
  
 Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
   35             40                 45  
  
 Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
   50             55                 60  
  
 Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
   65             70                 75                 80

Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
85 90 95

Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
100 105 110

Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
115 120 125

'

Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Gly Thr Met His Glu Leu Pro Arg Leu  
165 170 175

Glu Pro Gly Ser Pro Ile Leu Gly Tyr Trp Lys Gly Arg Arg Asp His  
180 185 190

Pro Pro Lys Ser Asp Leu Ile Glu Gly Arg Gly Asp Pro Glu Val Lys  
195 200 205

Arg Val Lys Leu Glu Asn Asn Val Glu Glu Ile Gln Pro Glu Gln Ala  
210 215 220

Glu Thr Asn Lys Gln Glu Gly Thr Asp Lys Glu Asn Lys Gly Lys Phe  
225 230 235 240

Glu Lys Glu Thr Glu Arg Ile Gly Gly Ser Glu Val Val Thr Asp Val  
245 250 255

Glu Lys Gly Ile Val Lys Phe Glu Phe Asp Gly Val Glu Tyr Thr Phe  
260 265 270

Lys Glu Arg Pro Ser Val Val Glu Glu Asn Glu Gly Lys Ile Glu Phe  
275 280 285

Arg Val Val Asn Asn Asp Asn Thr Lys Glu Asn Met Met Val Leu Thr  
290 295 300

Gly Leu Lys Asn Ile Phe Gln Lys Gln Leu Pro Lys Met Pro Lys Glu  
305 310 315 320

Tyr Ile Ala Arg Leu Val Tyr Asp Arg Ser His Leu Ser Met Ala Val  
325 330 335

Ile Arg Lys Pro Leu Thr Val Val Gly Gly Ile Thr Tyr Arg Pro Phe  
340 345 350

Asp Lys Arg Glu Phe Ala Glu Ile Val Phe Cys Ala Ile Ser Ser Thr  
355 360 365

Glu Gln Val Arg Gly Tyr Gly Ala His Leu Met Asn His Leu Lys Asp  
370 375 380

Tyr Val Arg Asn Thr Ser Asn Ile Lys Tyr Phe Leu Thr Tyr Ala Asp  
385 390 395 400

Asn Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe Thr Lys Glu Ile  
405 410 415

Thr Leu Asp Lys Ser Ile Trp Met Gly Tyr Ile Lys Asp Tyr Glu Gly  
420 425 430

Gly Thr Leu Met Gln Cys Asn Met Ala Ile Pro Gly Gly Gly Arg Ile  
435 440 445

Phe Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Tyr Pro Tyr Asp Val  
450 455 460

Pro Asp Tyr Ala Gly Ser Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ala  
465 470 475 480

Gln Cys Gly Arg Ser Ser  
485

<210> 26  
<211> 486  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic  
<400> 26

Met Lys Leu Leu Ser Ser Ile Glu Gln Ala Cys Asp Ile Cys Arg Leu  
1 5 10 15

Lys Lys Leu Lys Cys Ser Lys Glu Lys Pro Lys Cys Ala Lys Cys Leu  
20 25 30

Lys Asn Asn Trp Glu Cys Arg Tyr Ser Pro Lys Thr Lys Arg Ser Pro  
35 40 45

Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
50 55 60

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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
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Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
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Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
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Lys Lys Glu Ile Glu Phe Gln Gly Thr Met His Glu Leu Pro Arg Leu  
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Glu Pro Gly Ser Pro Ile Leu Gly Tyr Trp Lys Gly Arg Arg Asp His  
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Pro Pro Lys Ser Asp Leu Ile Glu Gly Arg Gly Asp Pro Glu Val Lys  
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Arg Val Lys Leu Glu Asn Asn Val Glu Glu Ile Gln Pro Glu Gln Ala  
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Glu Thr Asn Lys Gln Glu Gly Thr Asp Lys Glu Asn Lys Gly Lys Phe  
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Glu Lys Glu Thr Glu Arg Ile Gly Gly Ser Glu Val Val Thr Asp Val  
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Glu Lys Gly Ile Val Lys Phe Glu Phe Asp Gly Val Glu Tyr Thr Phe  
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Lys Glu Arg Pro Ser Val Val Glu Glu Asn Glu Gly Lys Ile Glu Phe  
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Arg Val Val Asn Asn Asp Asn Thr Lys Glu Asn Met Met Val Leu Thr  
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Gly Leu Lys Asn Ile Phe Gln Lys Gln Leu Pro Lys Met Pro Lys Glu  
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Tyr Ile Ala Arg Leu Val Tyr Asp Arg Ser His Leu Ser Met Ala Val  
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Ile Arg Lys Pro Leu Thr Val Val Gly Gly Ile Thr Tyr Arg Pro Phe  
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Asp Lys Arg Glu Phe Ala Glu Ile Val Phe Cys Ala Ile Ser Ser Thr  
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Glu Gln Val Arg Gly Tyr Gly Ala His Leu Met Asn His Leu Lys Asp  
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Tyr Val Arg Asn Thr Ser Asn Ile Lys Tyr Phe Leu Thr Tyr Ala Asp  
385 390 395 400

Asn Tyr Ala Ile Gly Tyr Ala Lys Lys Gln Gly Phe Thr Lys Glu Ile  
405 410 415

Thr Leu Asp Lys Ser Ile Trp Met Gly Tyr Ile Lys Asp Tyr Glu Gly  
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Gly Thr Leu Met Gln Cys Asn Met Ala Ile Pro Gly Gly Gly Arg Ile  
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Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
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Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
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Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
130 135 140

Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
145 150 155 160

Lys Lys Glu Ile Glu Phe Gln Leu Pro Gly Ser Thr Lys Arg Ala Leu  
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Pro Asn Asn Thr Ser Ser Ser Pro Gln Pro Lys Lys Lys Pro Leu Asp  
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Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu Met  
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Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala Gly  
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Lys Glu Pro Gly Gly Ser Arg Ala His Ser Ser His Leu Lys Ser Lys  
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Lys Gly Gln Ser Thr Ser Arg His Lys Lys Leu Met Phe Lys Thr Glu  
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Gly Pro Asp Ser Asp Pro Gly Ser Pro Ile Leu Gly Tyr Trp Lys Gly  
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Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly Arg Gly Asp  
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Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp Lys Glu Asn  
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Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu Asn Glu Gly  
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Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln Leu Pro Lys  
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Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg Ser His Leu  
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Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly Gly Ile Thr  
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Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val Phe Cys Ala  
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Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His Leu Met Asn  
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His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys Tyr Phe Leu  
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Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe  
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Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly Tyr Ile Lys  
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Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala Ile Pro Gly  
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Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Ser Val Glu Thr Asp Met Pro Leu Thr Leu Arg Gln His Arg Ile Ser  
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Ala Thr Ser Ser Ser Glu Glu Ser Ser Asn Lys Gly Gln Arg Gln Leu  
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Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
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Lys Lys Glu Ile Glu Phe Gln Leu Pro Gly Ser Thr Lys Arg Ala Leu  
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Pro Asn Asn Thr Ser Ser Ser Pro Gln Pro Lys Lys Lys Pro Leu Asp  
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Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu Met  
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Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala Gly  
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Lys Glu Pro Gly Gly Ser Arg Ala His Ser Ser His Leu Lys Ser Lys  
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Lys Gly Gln Ser Thr Ser Arg His Lys Lys Leu Met Phe Lys Thr Glu  
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Gly Pro Asp Ser Asp Pro Gly Ser Pro Ile Leu Gly Tyr Trp Lys Gly  
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Arg Arg Asp His Pro Pro Lys Ser Asp Leu Ile Glu Gly Arg Gly Asp  
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Pro Glu Val Lys Arg Val Lys Leu Glu Asn Asn Val Glu Glu Ile Gln  
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Pro Glu Gln Ala Glu Thr Asn Lys Gln Glu Gly Thr Asp Lys Glu Asn  
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Lys Gly Lys Phe Glu Lys Glu Thr Glu Arg Ile Gly Gly Ser Glu Val  
325 330 335

Val Thr Asp Val Glu Lys Gly Ile Val Lys Phe Glu Phe Asp Gly Val  
340 345 350

Glu Tyr Thr Phe Lys Glu Arg Pro Ser Val Val Glu Glu Asn Glu Gly  
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Lys Ile Glu Phe Arg Val Val Asn Asn Asp Asn Thr Lys Glu Asn Met  
370 375 380

Met Val Leu Thr Gly Leu Lys Asn Ile Phe Gln Lys Gln Leu Pro Lys  
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Met Pro Lys Glu Tyr Ile Ala Arg Leu Val Tyr Asp Arg Ser His Leu  
405 410 415

Ser Met Ala Val Ile Arg Lys Pro Leu Thr Val Val Gly Gly Ile Thr  
420 425 430

Tyr Arg Pro Phe Asp Lys Arg Glu Phe Ala Glu Ile Val Phe Cys Ala  
435 440 445

Ile Ser Ser Thr Glu Gln Val Arg Gly Tyr Gly Ala His Leu Met Asn  
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His Leu Lys Asp Tyr Val Arg Asn Thr Ser Asn Ile Lys Tyr Phe Leu  
465 470 475 480

Thr Tyr Ala Asp Asn Tyr Ala Ile Gly Tyr Ala Lys Lys Gln Gly Phe  
485 490 495

Thr Lys Glu Ile Thr Leu Asp Lys Ser Ile Trp Met Gly Tyr Ile Lys  
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Asp Tyr Glu Gly Gly Thr Leu Met Gln Cys Asn Met Ala Ile Pro Gly  
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Gly Gly Arg Ile Phe Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Tyr  
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Gly Ser Pro Ile Leu Gly Tyr Trp Lys Gly Arg Arg Asp His Pro Pro  
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Val Asn Ile Lys Leu Asn Ala Asn Ser Pro Ser Lys Lys Thr Thr Thr  
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Arg Pro Asn Thr Ser Arg Ile Asn Lys Pro Trp Arg Ile Ser His Ser  
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Ser Ser Lys Ile Pro Ser Pro Ile Arg Lys Ala Thr Ser Ser Lys Met  
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Asp Phe Glu Leu Gly Lys Lys Leu Gly Lys Phe Gly Lys Val  
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Arg Glu Val Glu Ile Gln Thr Ser Leu Asn His Pro Asn Leu Thr Lys  
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Gly Thr Ile Asp Tyr Leu Ser Pro Glu Met Val Glu Ser Arg Glu Tyr  
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Asp Ala Gln Asp Leu Ile Leu Lys Leu Leu Lys Tyr Asp Pro Lys Asp  
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Leu Thr Arg Ala His Leu Thr Glu Val Glu Ser Arg Leu Glu Arg Leu  
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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Asp Phe Glu Leu Gly Lys Lys Leu Gly Lys Phe Gly Lys Val  
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Arg Gln Leu Glu Ile Gln Thr Ser Leu Asn His Pro Asn Leu Thr Lys  
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Ser Tyr Gly Tyr Phe His Asp Glu Lys Arg Val Tyr Leu Leu Met Glu  
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Glu Asn Ile Leu Ile Gly Phe Asn Asn Val Ile Lys Leu Thr Asp Phe  
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Glu Gln Leu Phe Leu Leu Ile Phe Pro Arg Glu Asp Leu Asp Met Ile  
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Leu Lys Met Asp Ser Leu Gln Asp Ile Lys Ala Leu Leu Thr Gly Leu  
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Phe Val Gln Asp Asn Val Asn Lys Asp Ala Val Thr Asp Arg Leu Ala  
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Thr Val Ser Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro  
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Lys Lys Glu Ile Glu Leu Glu Asn Leu Tyr Phe Gln Gly Glu Phe Gln  
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Pro Thr Ser Pro Ser Leu Thr Thr Met Ala Met Lys Val Asn Met Glu  
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Lys Thr Ser Glu Phe Lys Asp Gly Leu Asp Met Ser Ala Ile Arg Gln  
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Val Lys Tyr Leu Gln Glu Met Gln His Pro Asn Val Ile Glu Leu Ile  
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Pro Thr Asp Leu Glu Val Val Ile Lys Asp Lys Ser Ile Leu Phe Thr  
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His Cys His Arg Asn Phe Ile Leu His Arg Asp Leu Lys Pro Asn Asn  
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